Kano Model Application for Classifying the Requirements of University Students

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Abstract

Universities are one of the most important institutionalized sectors of modern service markets. Like all over the world, in Turkey, the changing competition conditions force universities to develop new competition strategies. Thus, universities adopt customer based service provision approach in order to meet the requirements of customers/students better.

In modern markets to be able to provide customer satisfaction depends on determining customers' expectations well. The quality of the product or service is measured by the level of satisfaction of the customers' expectations. The first step of most recent quality techniques is to listen to the voice of customer. One of the approaches used to determine customer expectations is Kano model. Kano model reveals the relationship between the degree of meeting customer requirements and consumer satisfaction. Increase in the customer satisfaction as each customer expectation is met display differences. On the one hand a small amount of development in some requirements provides considerable satisfaction; on the other hand a great deal of development in some requirements brings little increase in customer satisfaction. Kano model is a model which explains the differences between these requirements.

In this study, the requirements of customer/students who take education service at Ataturk University are aimed to determine. Firstly, doing focus group interview the requirements were determined and the questionnaires were prepared. The questionnaires were applied to Ataturk University students. The requirements obtained according to the data were classified by means of Kano Model as basic requirements, expected requirements, and exciting requirements. Thus, which of the requirements to what extent contributes to increase customer/students' satisfaction was attempted to determine. The results by comparing with similar studies conducted in different universities in other countries were discussed. This study is considered to contribute to further studies.

Key words: Kano model, customer requirements, satisfaction at universities, Turkey

Introduction

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In modern competitive environments services are gaining increasingly more importance in the competitive formula of both firms and countries. Educational systems are becoming services for people in which global and local levels combine, thus a standardized offer is modified by local specificities. Universities become relational services, in which demand and supply (provider and receiver) cooperate to improve and design satisfying outputs. They face intense international and national competition, and consequently choose in the same way as firms (Jarvis, 2000). In fact customers, i.e. students or rather society, play an active role in defining the offer, either by asking for courses through enrolment, or showing their disapproval by leaving university, a sort of vote a` la Tiebout (1956). The higher the service quality is the more satisfied the customers become. Thus, satisfaction is based on customer expectations and perception of service quality (Johnston and Lyth, 1991; Ekinci, 2004; Cronin and Taylor, 1992; Christou and Sigala, 2002; Sigala, 2004a, b).

Understanding customer's requirements and determining their differences are important in the management of these requirements. Focusing on customer should be done not only for responding to customer's demands but also for understanding what those requirements are for these, there are classical methods like interviews and creating focus groups but there is also a "Kano Model" used in classifying the requirements (Okul, 2007). Kano model is a model which is used in order to categorize the customer requirements. In classical methods, there is a simple logic like, if you respond to customer's requirements the customer will be satisfied, if you don't respond to these requirements there will be dissatisfaction. But Kano Model grades the customer requirements and determines the levels of satisfaction. In this study, Kano model has been used in classifying the expectations of the university students from the services they get.
In the first part of the study, general information about Kano model has been given. And in the second part, there are the analysis of the data taken from the interviews with the university students of Atatürk University about their expectations from the services and the results. Some suggestions have been made according to the results taken at the end of the analysis.

Kano's Theory

In order to improve the quality of service, one should understand potential customer requirements better and then adjust its service offering according to those requirements. Kano's method is a good way to investigate the characteristics of customer requirements. By using Kano's method one can clarify the difficult-to-see customer requirements by classifying them into a few groups and by locating each requirement on a graph. The underlying assumption behind Kano's method is that the customer satisfaction is not always proportional to how fully functional the product is or in other words, higher quality does not necessarily lead to higher satisfaction for all product attributes or services requirements. In our case, type and intensity of service requirements may be considered must-be (expected) and should be satisfied at expected levels. On the other hand some service requirements (attractive also known as delighters, unexpected or exciting) don't make any difference in case of deprivation of these

requirements but elevate satisfaction levels when fulfiiled. They are neither explicitly expressed nor expected by students. The third group of service requirements in one-dimensional (existing) and how these requirements are met is highly correlated with satisfaction levels. (Sofyalıoğlu and Kartal, 2005, p. 365).

According to Kano (2001), the theory of attractive quality originated because of the lack of explanatory power of a one-dimensional recognition of quality. For instance, people are satisfied if a package of milk extends the expiration and dissatisfied if the package shortens the expiration. For a quality attribute such as leakage, people are not satisfied if the package does not leak, but are very dissatisfied if it does. The one-dimensional view of quality can explain the role of expiration but not leakage. To understand the role of quality attributes, Kano et al. (1984) present a model that evaluates patterns of quality, based on customers' satisfaction with specific quality attributes and their degree of sufficiency. On the horizontal axis in the Kano diagram (see Figure 1) the physical sufficiency of a certain quality attribute is displayed and the vertical axis shows the satisfaction with a certain quality attribute (Kano et al., 1984). The theory explains how the relationship between the degree of sufficiency, and customer satisfaction with a quality attribute, can be classified into five categories of perceived quality: "attractive quality", "one-dimensional quality", "must-be quality", "indifferent quality" and "reverse quality". The first three categories have been mentioned above. All the three types of service requirements can be seen in the following graph.

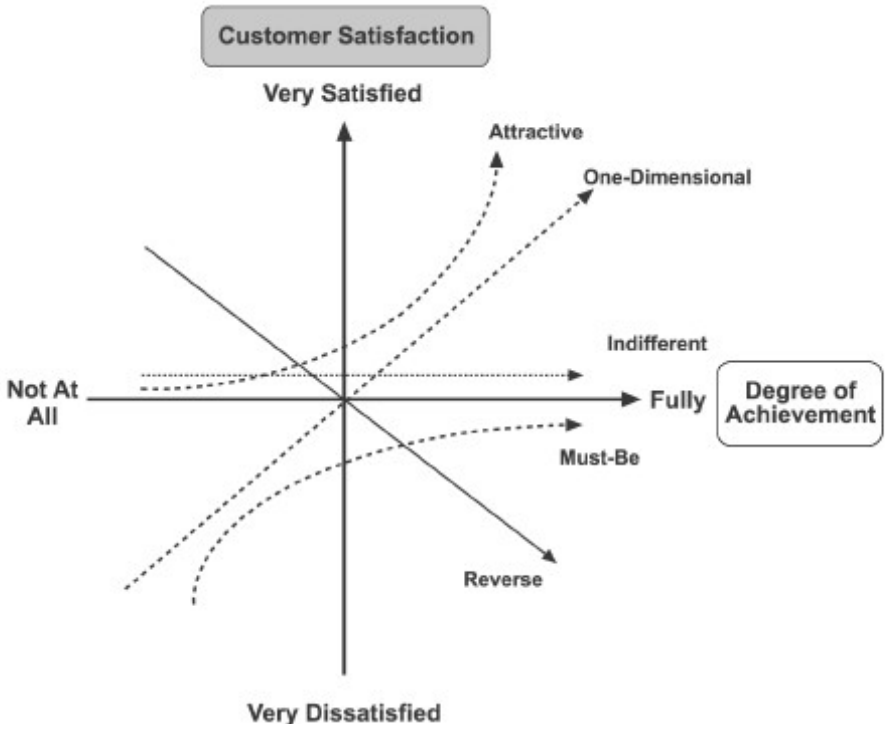

Figure 1: Kano's Model (Witell and Löfgren, 2007, p. 56).

In his model, Kano (Kano, 1984) distinguishes between three types of product requirements which influence customer satisfaction in different ways when met:

Must-be requirements: If these requirements are not fulfilled, the customer will be extremely dissatisfied. On the other hand, as the customer takes these requirements for granted, their fulfillment will not increase his satisfaction. The must-be requirements are basic criteria of a product. Fulfilling the must-be requirements will only lead to a state of "not dissatisfied". The customer regards the must-be requirements as prerequisites, he takes them for granted and therefore does not explicitly demand them. Must-be requirements are in any case a decisive competitive factor, and if they are not fulfilled, the customer will not be interested in the product at all.

One-dimensional requirements: With regard to these requirements, customer satisfaction is proportional to the level of fulfillment - the higher the level of fulfillment, the higher the customer's satisfaction and vice versa. One-dimensional requirements are usually explicitly demanded by the customer.

Attractive requirements: These requirements are the product criteria which have the greatest influence on how satisfied a customer will be with a given product. Attractive requirements are neither explicitly expressed nor expected by the customer. Fulfilling these requirements leads to more than proportional satisfaction. If they are not met, however, there is no feeling of dissatisfaction.

The advantages of classifying customer requirements by means of the Kano method are very clear:

- Priorities for product development. It is, for example, not very useful to invest in improving mustbe requirements which are already at a satisfactory level but better to improve one-dimensional or attractive requirements as they have a greater influence on perceived product quality and consequently on the customer's level of satisfaction.
- Product requirements are better understood: The product criteria which have the greatest influence on the customer's satisfaction can be identified. Classifying product requirements into must-be, one-dimensional and attractive dimensions can be used to focus on
- Kano's model of customer satisfaction can be optimally combined with quality function deployment. A prerequisite is identifying customer requirements, their hierarchy and priorities (Griffin/Hauser, 1993). Kano's model is used to establish the importance of individual product features for the customer's satisfaction and thus it creates the optimal prerequisite for processoriented product development activities.
- Kano's method provides valuable help in trade-off situations in the product development stage.

If two product requirements cannot be met simultaneously due to technical or financial reasons, the criterion can be identified which has the greatest influence on customer satisfaction.

- Must-be, one-dimensional and attractive requirements differ, as a rule, in the utility expectations of different customer segments. From this starting point, customer-tailored solutions for special problems can be elaborated which guarantee an optimal level of satisfaction in the different customer segments.
- Discovering and fulfilling attractive requirements creates a wide range of possbilities for differentiation. A product which merely satisfies the must-be and one-dimensional requirements is perceived as average and therefore interchangeable (Hinterhuber/Aichner/Lobenwein 1994).

Five-Level Kano Questionnaire

In the original version of the theory of attractive quality (Kano et al., 1984) the classification process is based on a survey using a Kano questionnaire. This questionnaire is constructed through pairs of customer requirement questions. Each question consequently has two parts: how do you feel if that feature is present in the product (functional form of the question), and how do you feel if that feature is not present in the product (dysfunctional form of the question) (see Kano et al., 1984; Berger et al., 1993). For each part of the questions, the customer selects one of five alternative answers. These five alternatives were described as "like"; "must-be"; "no feeling"; "give up"; and "do not like" (Kano et al., 1984). The perceptions were then evaluated into quality dimensions on the basis of how the respondents perceived the functional and dysfunctional form of a quality attribute (as shown in Figure 1).
The five-level Kano classification:

(1) Attractive quality (A).
(2) One-dimensional quality; (O).
(3) Must-be quality (M).
(4) Indifferent quality (I).
(5) Reverse quality (R).

Customer requirements → / ↓		Dysfunctional (negative) question				
		1. like	2. must be	3. neutral	4. live with	5. dislike
Functional (positive) question	1. like	Q	A	A	A	O
	2. must-be	R	I	I	I	M
	3. neutral	R	I	I	I	M
	4. live with	R	I	I	I	M
	5. dislike	R	R	R	R	Q

Customer requirement is ...

A: Attractive
M: Must-be
R: Reverse
O: One-dimensional
Q: Questionable
I: Indifferent

Figure 2: Five level Kano Classification

If the customer answers, for example, "I like it that way," as regards "If the edges of your skis grip well on hard snow, how do you feel?" - the functional form of the question, and answers "I am neutral," or "I can live with it that way," as regards "If the edges of your skis don't grip well on hard snow, how do you feel?" - the dysfunctional form of the question, the combination of the questions in the evaluation table produces category **A**, indicating that edge grip is an attractive customer requirement from the customer's viewpoint. If combining the answers yields category **I**, this means that the customer is indifferent to this product feature. He does not care whether it is present or not. He is, however, not willing to spend more on this feature. Category **Q** stands for questionable result. Normally, the answers do not fall into this category. Questionable scores signify that the question was phrased incorrectly, or that the person interviewed misunderstood the question or crossed out a wrong answer by mistake. In the study quoted here, no product criterion received a Q-rate higher than 2%. If looking up the answer in the evaluation table yields category **R**, this product feature is not only wanted by the customer but he even expects the reverse. For instance, when offering holiday tours it might well be that a specific customer segment wants pre-planned events every day, while another would dislike it (Berger et. al 1993).

Purpose and Importance of the study

Today as in all over the world, there is also a dynamic competition among the universities in Turkey. Gaining superiority in the competition at the universities, which have an institutional aspect compared to the other service sectors, depends mostly on the student/customer satisfaction. Because, today, just as in all other sectors, the competition is focused on student/customer satisfaction at the universities too. As is known, satisfaction can be measured with the levels of responding to the expectations. But, the levels of satisfaction vary for each requirement to be responded. Therefore, it is important determining the contribution to be gained by responding to each requirement for the customer satisfaction. For that reason, in this study, we have tried to determine how effective those students' expectations are on the satisfaction they get. Under the light of the results taken from the study, some suggestions will be made about how universities can use their services in the way their students/customers can get satisfied. In the study Kano model has been used which is widely used in the classification of the requirements.

Metods

Data and Samples

After an extensive literature review on quality improvement in higher education, several potential student requirements are identified and these requirements are discussed with a focus group comprised of nine students. The focus group study ended up with a total of 35 potential student requirements (Table.1).

Atatürk University' 10 faculty's students accepted to join the study. Totally 450 questionnaire forms were prepared. As a result of the elimination of the mistaken and missing forms 435 forms were evaluated.

In the study, the data tool was questionnaire forms, these forms were applied in March 2007. The data obtained were tested by means of SPSS frequence analysis, and Kano's Model.

Table 1: Variables of Study

	Requirements
1	Dormitory/residence services
2	Cleaning and hygiene
3	Modern equipments and decoration in the classrooms: (projection machine, data machine, etc.)
4	Uncrowded classroom
5	Food dining hall services
6	Sign boards on campus and identifying signs on the buildings
7	The possibilities of doing lessons in the laboratories
8	Shopping services in school buildings
9	Student unions and clubs
10	Psychological counseling services
11	The possibility of a good communication with the teaching staff
12	The possibility of communicating with the administration
13	Transportation facilities on campus
14	Scholarships given by the university body
15	Shopping center on campus
16	Sports and entertainment facilities
17	Meeting hours with the teaching staff weekends
18	Some organizations of festivals, concerts and celebrations
19	Celebrities invited to some panels, seminars, etc.
20	The promotion of the university nationally and internationally
21	The good climate of the town where the university is located
22	The positive attitude of the people of the town towards the students
23	Staying overnight facilities of the town
24	The historical, natural sites in town
25	Organizing socio-cultural activities in town
26	Transportation alternatives of the town with other towns (by bus, by train, by planet, etc.)
27	The availability of internet services
28	Organizing some courses with certificate
29	The library's having got a rich data base
30	Having got a reunion club or organization to follow up students after graduation
31	Professional development services given after graduation
32	Using the standard deviation system in exams
33	Having got student exchange programs
34	The security system on campus
35	The conformity of the teaching staff in the international scientific standards of criteria

Findings

Demographic Features

In Table.1, the demographic features of the participants who are the students are displayed.

Table 1: Demographic Features

Number/percentage / Demographic Features		number	percentage
Sex	Female	177	40.7
	Male	258	59.3
Age	17-20	110	25.3
	21-24	278	63.9
	25-28	41	9.4
	29….	6	1.4

40.7% of the participants are female and the 59.3% of them are male. As for the ages of the participants, 25.3% of them in the ages of 17-20, 63.9 %of them in 21-24, and 9.4% of them are in 25-28, 1.4 %of them are in 29… ages.

Kano's Model Application

A frequency analysis has been done to find out in which requirements group the students' requirements take places in Table.2. The requirements groups which are mostly repeated by the students for each requirement, is shown.

Table 2: The Classification of The requirements According to Kano Model.

		Frequency		
		1	2	3
1	Dormitory/residence services	O (158)	I (102)	M (105)
2	Cleaning and hygiene	O (299)	M (51)	I (21)
3	Modern equipments and decoration in the classrooms: (projection machine, data machine, etc.)	O (207)	I (78)	A (75)
4	Uncrowded classroom	I (216)	O (127)	M (55)
5	Food dining hall services	O (218)	I (133)	M (38)
6	Sign boards on campus and identifying signs on the buildings	I (201)	O (129)	M (47)
7	The possibilities of doing lessons in the laboratories	O (212)	I (138)	A (39)
8	Shopping services in school buildings	O (247)	I (91)	M (50)
9	Student unions and clubs	I (226)	A/O (86)	M (24)
10	Psychological counseling services	I (193)	O (157)	A (48)
11	The possibility of a good communication with the teaching staff	O (241)	I (93)	A (60)
12	The possibility of communicating with the administration	O (164)	I (147)	A (91)
13	Transportation facilities on campus	O (153)	A (146)	I (79)
14	Scholarships given by the university body	O (233)	I (83)	A (73)

15	Shopping center on campus	O (156)	I (136)	A (107)
16	Sports and entertainment facilities	O (197)	I (116)	A (94)
17	Meeting hours with the teaching staff weekends	I (197)	O (114)	A (70)
18	Some organizations of festivals, concerts and celebrations	O (170)	I (123)	A (110)
19	Celebrities invited to some panels, seminars, etc.	O (182)	A (142)	I (80)
20	The promotion of the university nationally and internationally	O (269)	A (81)	I (40)
21	The good climate of the town where the university is located	O (196)	M (111)	I (105)
22	The positive attitude of the people of the town towards the students	O (261)	I/A (65)	M (27)
23	Staying overnight facilities of the town	O (217)	I (132)	A (42)
24	The historical, natural sites in town	O (159)	I (149)	A (101)
25	Organizing socio-cultural activities in town	O (226)	I (96)	A (86)
26	Transportation alternatives of the town with other towns (by bus, by train, by planet, etc.)	O (278)	M (70)	A (53)
27	The availability of internet services	O (246)	I (89)	M (57)
28	Organizing some courses with certificate	O (227)	I (106)	A (69)
29	The library's having got a rich data base	O (250)	I (68)	A (63)
30	Having got a reunion club or organization to follow up students after graduation	O (168)	I (143)	A (81)
31	Professional development services given after graduation	O (233)	I (87)	A (65)
32	Using the standard deviation system in exams	I (175)	O (89)	R (84)
33	Having got student exchange programs	O (168)	I (160)	A (72)
34	The security system on campus	O (284)	I (74)	M (22)
35	The conformity of the teaching staff in the international scientific standards of criteria	O (256)	A (68)	I (61)

According to the results of the frequency analysis of the frequency of repeating 6 of the 35 requirements are indifferent requirements, 29 of the requirements are one-dimensional requirements. Those requirements which are defined as one-dimensional requirements are as follows: a clean and hygienic environment, the positive attitude of the people in the town where the university is located, the alternative transportation possibilities of the town with the other towns around (by bus, by train, by plane, etc.), the university library's having got a rich data base, the security system on campus, and the teaching staff's confronting with the international scientific criteria.

After the first classification according to the most frequently used answers, customer's satisfaction coefficients have been calculated in order to find out the variables which are closer to one-dimensional requirements and attractive requirements. The formulas used in the

calculation of customer's satisfaction coefficients are shown in Table 3 and Table 4.

Table 3: Calculation of Customer's Satisfaction Coefficients (CSC)

Customer's Satisfaction	$\frac{A+O}{A+O+I+M}$
Customer's Dissatisfaction	$\frac{O+M}{(-1)*(A+O+I+M)}$

Table 4: Total Customer's Satisfaction Coefficients (CSC)

Total CSC	$\frac{A+O}{A+O+I+M}+\frac{O+M}{(-1)*(A+O+I+M)}=\frac{A-M}{(A+O+I+M)}$

By calculating the customer satisfaction coefficients the variables with the negative coefficients have been identified in Table 5 as those requirements which are closer to one-dimensional requirements.

Table 5: The requirements which are closer to the classification of one-dimensional requirements.

	Frequency	Satisfaction Dimension	Dissatisfaction Dimension	Total Customer's Satisfaction
1	O (158)	0.45	-0.70	-0.25
2	O (299)	0.82	-0.86	-0.04
4	I (216)	0.36	-0.43	-0.07
5	O (218)	0.58	-0.61	-0.03
6	I (201)	0.40	-0.43	-0.03
8	O (247)	0.66	-0.72	-0.06
11	O (241)	0.64	-0.71	-0.07
21	O (196)	0.64	-0.65	-0.01
26	O (278)	0.73	-0.77	-0.04
27	O (246)	0.64	-0.73	-0.09
34	O (284)	0.73	-0.77	-0.04

According to the results, those requirements which are closer to the classification of one-dimensional requirements are as follows: the sufficiency of dormitories and residence services, a clean and hygienic environment, the number of students in the classrooms, dining-hall services, the sign boards on campus and school buildings, the shopping services at schools, the communication possibilities with the teaching staff, the climate conditions of the town where the campus is located, the alternative transportation possibilities of the town with the other towns (by bus, by train, by plane, etc), the internet facilities on campus, the security services on campus.

The variables the customer satisfaction coefficients of which have been found over 0.10 positively are accepted as the variables which are closer to one-dimensional requirements. These variables are shown in Table 6.

Table 6: Attractive Requirements

	Frequency	Satisfaction Dimension	Dissatisfaction Dimension	Total Customer's Satisfaction
3	O (207)	0.73	-0.57	0.16
9	I (226)	0.41	-0.26	0.15
12	O (167)	0.60	-0.44	0.16
13	O (153)	0.75	-0.44	0.31
14	O (233)	0.75	-0.62	0.13
15	O (156)	0.62	-0.43	0.19
16	O (197)	0.68	-0.50	0.18
17	I (197)	0.47	-0.32	0.15
18	O (170)	0.68	-0.44	0.24
19	O (182)	0.76	-0.48	0.28
20	O (269)	0.84	-0.71	0.13
24	O (159)	0.62	-0.40	0.22
25	O (226)	0.75	-0.56	0.19
28	O (227)	0.64	-0.54	0.10
30	O (168)	0.78	-0.67	0.11
31	O (233)	0.72	-0.62	0.10
33	O (168)	0.58	-0.44	0.14
35	O (256)	0.81	-0.68	0.13

According to the results taken, the following requirements have been classified as the requirements which are closer to attractive requirements: the decoration and equipments of the classrooms (data projection machines, etc.), the existence of student's unions and clubs, the possibilities of communication with the administration, the transportation facilities on campus, the scholarships given by the university body, a shopping center on campus, sports, entertainment, recreation facilities on campus, having got a common place where the students could meet with the teaching staff at weekends, the organization of activities like festivals, concert and celebrations, the celebrities invited to give panels, seminars and activities as such, the university's promotion nationally and internationally, the historical and natural sites in town where the campus is located, social and cultural activities in town where the campus is located, the organization of some courses and certificate programs at the university, a union or organization following the re-unions of the students who have graduated and left the university the services given to the post-graduates to help the develop professionally after the graduation, the existence of the exchange programs with other universities the conformity of the teaching staff with the international scientific criteria.

Table 7: Closer to Reverse Requirements

	Frequency	Satisfaction Dimension	Dissatisfaction Dimension	Total Customer's Satisfaction
32	I (175)	0.33	-0.32	0.01

According to the results, the application of standard deviation as the evaluation system at the university has been found out as closer to reverse requirements. The students have been found out to be satisfied with the standard deviation system, but they expect that some other systems should be applied too in some specific cases.

Table 8: The requirements which are closer both to attractive requirements and to one-dimensional requirements

	Frequency	Satisfaction Dimension	Dissatisfaction Dimension	Total Customer's Satisfaction
7	O (212)	0.61	-0.57	0.04
10	I (193)	0.49	-0.42	0.07
22	O (261)	0.78	-0.69	0.09
23	O (217)	0.62	-0.59	0.03
29	O (250)	0.74	-0.70	0.04

The variables in this group seem to be closer both to attractive and the one-dimensional requirements. According to the results, the following requirements have been found out to be in this group: the possibility of doing lessons in a laboratory, the psychological counseling services on campus, the positive attitude of the people in town where the university is located, the staying overnight facilities in town, the library's having got a rich data base at the university.

According to Kano's transformation table, the x and y values taken as a result of the transformation process have been shown in Table. 10. The transformation process has been applied to those requirements the importance levels of which are above 4 and those which are closer to one-dimensional and must requirements. There is no variable among the requirements the importance level of which is below 3. No transformation process has been applied to the variables with the level of importance between 3 and 4 so that the results can be easily under stood.

Table 9: Transformation Table

	I like	Must-be	Neutral	I live with	Dislike
Functional	4	2	0	-1	-2
Dysfunctional	-2	-1	0	2	4

Table 10: The x and y values of the levels of importance of the requirements

	y Value	x Value	Importance Level	Standard Deviation
1	2,12	2,94	4,16	1.31
2	3,47	3,34	4,75	0.72
4	2,16	2,04	4,01	1.02
5	2,81	2,60	4,23	1.06
7	2,84	2,62	4,09	1.13
8	3,04	3,07	4,45	0.89
11	3,18	2,82	4,50	0.89
21	3,07	2,48	4,19	1.00

22	3,40	3,08	4,60	0.78
23	2,95	2,80	4,35	0.93
26	3,18	2,90	4,60	0.81
27	3,16	2,76	4,45	0.88
29	2,68	2,10	4,58	0.82
34	3,43	3,00	4,57	0.87

According to the results taken out of the research, there has been found no requirement the level of importance of which is below 3, among the university students requirements. The requirements the importance levels of which are above 4.50 are as in the following: cleaning and hygiene, the attitudes of the people in town where the university is located towards the university students, the transportation possibilities of the town with the other towns around, the university library's having got a rich data base, the security services on campus. The positions of the requirements according to x and y values are shown Figure 3.

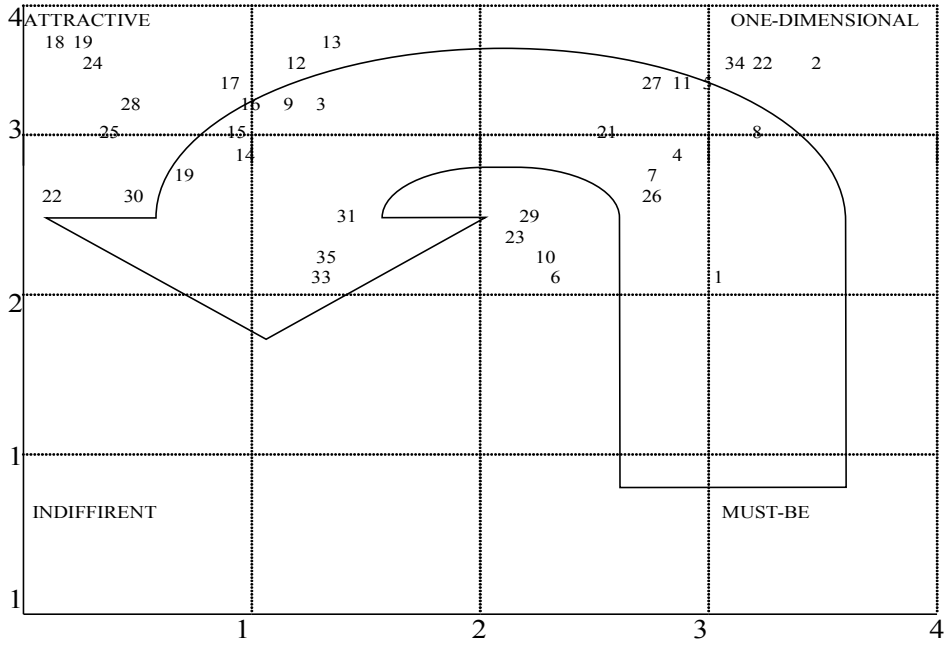

Figure 3: The positions of the requirements according to "x" and "y" values

Results and Suggestion

According to the frequently used answers in Kano Model applied in order to determine the students' expectations from the university services, out of the 35 requirements, 6 variables have been found out to be indifferent requirements; these are as in the following: the number of students in the classrooms, the existence of the sign boards on campus and university buildings, the existence of student unions and clubs, the psychological counseling services, the existence of a place where students could meet with the teaching staff at weekends, the application of standard deviation in the exams. All the other requirements are placed as one-dimensional requirements.

Later on, according to the results taken out of the calculations of customer's satisfaction coefficients, the following requirements have been found to be closer to one-dimensional requirements classification. The sufficiency dormitory/residence services, a clean and hygienic environment, the number of students in classrooms, dining-hall services, the signboards on campus and in the buildings, the shopping services in school buildings, the communication possibilities with the teaching staff, the climate conditions of the town where the university is located, the transportation facilities of the town with the other towns where the university is located (by bus, by train, by plane, etc.), the internet possibility on campus, the sufficiency of the security precautions on campus.

As a result of the calculation of satisfaction coefficients, the variables which are closer to attractive requirements are as follows: the decoration of the classrooms with modern equipments (projection machines etc.).

The existence of student unions and clubs, the possibility of communicating with the administration the transportation facilities on campus, the scholarships given by the university board, a shopping center on campus, facilities like sports, entertainment and recreational buildings, having got a common place where the students could meet with the teaching staff at weekends, activities like festivals, celebrations and concerts, organizations like celebrities being invited to give seminars, panels, etc., the university's having been known nationally and internationally the historical and natural sites of the town where the university is located, socio-cultural organizations in town where the university, cultural organizations in town where the university is located, the organization of courses and certificate programs at university, a union or organization to follow up these who have graduated from the university, professional support of the students after graduation with some services, an change program with the other universities, the conformity of the teaching staff with the international scientific criteria.

In this study, the evaluation of the exams with the standard deviation system has been found to be in the reverse requirements group. The students are on the one hand satisfied with the standard deviation system, on the other hand, they feel close to some other evaluation systems.
The following requirements seem to be close to both one-dimensional requirements; and attractive requirements: the possibility of taking lessons in a laboratory, the existence of psychological counseling services at the university, the positive attitudes of the people in town towards the students where the university is located, staying overnight facilities in town, university library's having got a rich data base. That means, not responding to these requirements result in dissatisfaction in the students, and responding to those requirements result in positive contribution to the satisfaction coefficients.

All of the variables used in the research, 35 variables all of them have got an importance level above 3.5. The importance levels of all the requirements have been found to be high. According to the diagram designed as a result of transformation process of the requirements which have got an average importance level above 4, the following requirements have been placed in the one-dimensional group: cleaning

and hygiene, the positive attitudes of the people in town where the university is located towards the students, the transportation possibilities of the town with the other towns around, the university library's having got a rich data base, the security services given peculiarly, dormitory and residence possibilities, the number of students in the classrooms, dining-hall services, the possibility of taking lesson in a laboratory, shopping services inside the school buildings, the good climate conditions in town where the university is located, staying overnight facilities in town, internet possibilities. As seen in the results, the variables which have been close to indifferent requirements in the first analysis done before, they have been placed in one-dimensional requirements in the final analysis.
The results taken out of the study is in parallel with similar studies (Sofyalıoglu, Kartal, 2005, p.363). However, in another study, six segments were identified: the first two groups the services are clearly separated from the others, i.e. lecture halls and library, and scored the highest rankings, thus being perceived as high quality. The third group shows the services strictly related to didactic activities such as internet facilities, laboratories and teaching support equipment, whose perception resulted as similar for all the students. The fourth is composed of services that can be defined "additional" in relation to "basic" educational services (i.e. scholarship, accommodation, canteens, leisure activities). The fifth group represents the inefficient or poorly perceived services, such as administrative services, tutoring, placement, international relationship, counseling, and free language courses. In particular, since tutoring, placement and counseling are new but also "innovative" services for the University of Bari, they scored rankings slightly below average. In the end, the sixth group is composed of the services that are more linked to the staff, i.e. "online exam booking" and "contacts with staff", that scored controversial evaluation in relation to the attitude of students, closely linked to the faculty attended and their technological background (Petruzzellis, et.all., 2006, p.357).

As seen in the results taken out of the study, university students perceive physical, basic and learning requirements as one-dimensional requirements group. As is known, not responding to these requirements results in dissatisfaction but a great satisfaction is not also gained when responding to those requirements.

The universities should inevitably respond to those requirements in this group, we can say that they are the inseparable parts of the service given to the students. The great increase in the satisfaction can only be possible by responding to the attractive requirements more. As can be realized from the results, attractive requirements are basically centered on social, cultural and sportive activities and the prestige of the university.

Therefore, first the problem of dissatisfaction should be removed by responding to the one-dimensional/basic requirements at the universities. These requirements are already responded at most of the universities. Students perceive responding to these requirements as a kind of requirement and must and responding to those requirements doesn't influence the satisfaction level. Only, when not responding, dissatisfaction occurs. In order to increase the satisfaction level, far beyond the students' basic/one dimensional requirements, more importance should be given to responding to the attractive requirements

such as certificate programs, organizing sportive, entertainment, cultural activities, giving importance to the prestige and promotion of the university, giving place to such studies which would a rich the image of the university, having organized national and international activities. They are all of great importance in increasing the student satisfaction. It is also essential that local administrations should organize some social, cultural and sportive activities if student satisfaction is expected to increase in towns where there is a university. In this sense, it would be helpful if university administration and the local administration should develop an effective communication between themselves.

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